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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,971	08/17/2001	Shun-An Chen	0941-0306P-SP	1826

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EXAMINER

SUN, XIUQUIN

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 04/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,971

Applicant(s)

CHEN ET AL.

Examiner

Xiuqin Sun

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 3, line 23, page 4, line 25, page 5, line 5 and line 9, the term "SPC" is used before it is defined.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su et al. (U.S. Pat. No. 6260941) in view of Juszkievicz et al. (U.S. Pat. No. 6353169).

Su et al. teach a system for dynamically monitoring stability of manufacturing equipment (see abstract; col. 4, lines 66-67 and col. 5, lines 1-6), comprising: a process executor requesting a plurality of semi-manufactured products processed by the manufacturing equipment to be inspected (col. 21, lines 6-9 and lines 24-26) at a first sampling rate (col. 17, lines 35-37) and receiving a plurality of inspection results (col. 21, lines 18-37); a data processor analyzing the inspection results from the process

executor to determine a second sampling rate (col. 17, lines 35-45); a device storing the second sampling rate (col. 25, lines 28-38); an input device for user inputting (col. 6, lines 35-37) through which a user-defined sampling rate can be entered; a display for displaying visual information to a user (col. 6, lines 37-40).

Su et al. do not mention explicitly: a controller receiving said second sampling rate from the storage device and changing said first sampling rate of the inspection requested by the process executor to said second sampling rate.

Juszkiewicz et al. disclose a system that uses multiple sampling rates for system operation (col. 4, lines 43-45 and col. 20, lines 30-37) and teaches a controller that has the capability of converting sampling rates (col. 13, lines 24-38), and the controller is of the functionality of a server (col. 3, lines 62-65).

It would have been obvious to include the teaching of Juszkiewicz et al. technique to dynamically change the sampling rate in the Su system in order to better monitor the stability of manufacturing equipment.

4. Claims 4, 5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Su et al. and Juszkiewicz et al., and further in view of Li (U.S. Pat. No. 6276997).

The Su and Juszkiewicz combination teaches a method and system that includes the subject matter discussed above except that: said manufacturing equipment etches the semi-manufactured products.

Li discloses a method and system and teaches: a semiconductor manufacturing process that is capable of etching the semi-manufactured products such as a wafer (col.

5, lines 58-65); and a technique for forming an oxide layer on the semi-manufactured products (col. 2, lines 12-21).

It would have been obvious to include the teaching of Li semiconductor manufacturing process and Li oxide layer formation technique in the combination of Su and Juskiewicz in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Su et al. and Juskiewicz et al., and further in view of Sandoval (U.S. Pat. No. 6345259).

The Su and Juskiewicz combination teaches a method and system that includes the subject matter discussed above except that: the process executor is a Manufacturing Executive System (MES).

Sandoval teaches a Manufacturing Executive System (MES) that serves as a process executor used in a computer integrated manufacturing environment (col. 4, lines 27-33; col. 11, lines 6-16 and lines 29-41).

It would have been obvious to include the teaching of Sandoval MES in the combination of Su and Juskiewicz in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Su et al. and Juskiewicz et al., and further in view of Webster (U.S. Pat. No. 5505090).

The Su and Juskiewicz combination teaches a method and system that includes the subject matter discussed above except that: the inspection of the semi-manufacturing products is non-destructive.

Webster teaches a method and apparatus for non-destructive inspection of composite materials such as the semi-manufacturing products (see abstract) by sampling the products at a given sampling rate (col. 9, lines 32-50).

It would have been obvious to include the teaching of Webster technique for non-destructive inspection of semi-manufacturing products in the combination of Su and Juskiewicz in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Su et al. and Juskiewicz et al., and further in view of Schmolke et al. (U.S. Pat. No. 6333785).

The Su and Juskiewicz combination teaches a method and system that includes the subject matter discussed above except that: using a thickness of an oxide layer and an etching depth as the standards for inspection.

Schmolke et al. teach a method in which the thickness of an oxide layer is used as the standard in inspecting a smooth surface of semiconductor wafers (col. 3, lines 45-60 and col.4, lines 1-5).

It would have been obvious to include the teaching of Schmolke inspection of thickness of an oxide layer in the combination of Su and Juskiewicz in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Su et al. and Juskiewicz et al., and further in view of Charles (U.S. Pat. No. 6335559).

The Su and Juskiewicz combination teaches a method and system that includes the subject matter discussed above except that: using a thickness of an oxide layer and an etching depth as the standards for inspection.

Charles teaches a method and device that can monitor the operation of etching a semiconductor wafer by inspecting the etching depth (col. 7, lines 36-53).

It would have been obvious to include the teaching of Charles inspection of etching depth in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Su et al. and Juskiewicz et al., and further in view Hinkle (U.S. Pat. No. 6190313).

The Su and Juskiewicz combination teaches a method and system that includes the subject matter discussed above except that: the data processor is an SPC analyzing software application.

Hinkle teaches an Statistical Process Control (SPC) analyzing software application used as a data processor in processing and analyzing the data in question (see abstract; col. 2, lines 59-61 and col. 3, lines 49-61)

It would have been obvious to include the teaching of the Hinkle SPC analyzer in the combination of Su and Juskiewicz in order to provide a better system for dynamically monitoring stability of manufacturing equipment.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (703)305-3467. The examiner can normally be reached on 7:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hilten can be reached on (703)308-0719. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-5841 for regular communications and (703)308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

XS
April 1, 2002


JOHN S. HILTEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800